IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Masami Maekawa

Application No.: 10/653,193	Confirmation No.: 1753
Filed: September 3, 2003	Art Unit: 3626
For: EXAMINATION SCHEDULING PROGRAM FOR NUCLEAR MEDICAL EXAMINATION APPARATUS	Examiner: Rachel L. Porter

APPEAL BRIEF

MS Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

As required under 37 C.F.R. §41.66(a), this brief is filed within the statutory term of the Notice of Appeal filed in this case on November 8, 2010, and is in furtherance of said Notice of Appeal.

The fees required under 37 C.F.R. §41.20(b)(2), and any required petition for extension of time for filing this brief and fees therefor, are dealt with in the accompanying TRANSMITTAL OF APPEAL BRIEF.

This brief contains items under the following headings as required by 37 C.F.R. §41.67 and §1205.02 of the MPEP:

I.	Real Party in Interest
II	Related Appeals and Interferences
III.	Status of Claims

I.   REAL PARTY IN INTEREST

The real party in interest for this appeal is Shimadzu Corporation of Kyoto-fu, Japan. An assignment of all rights in the present application to Shimadzu Corporation has been submitted and recorded by the U.S. Patent and Trademark Office at Reel 014453, Frame 0833.

II.   RELATED APPEALS AND INTERFERENCES

There are no other prior and pending appeals which will directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.

III.   STATUS OF CLAIMS

A.   Total Number of Claims in Application

There are 21 total claims in this application.

B.   Current Status of Claims

1.   Claims canceled: None

2.   Claims withdrawn from consideration but not canceled: Claim 21

3.   Claims pending: Claims 1-21

4.   Claims allowed: None

5.   Claims rejected: Claims 1-20

C.   Claims on Appeal

The claims on appeal are claims 1-20.

IV.   STATUS OF AMENDMENTS AFTER FINAL

Applicant filed an Amendment in response to the first Office Action (mailed April 2, 2008) on August 4, 2008, following the filing of the application on September 3, 2003. The Examiner responded to the Amendment with a Final Office Action mailed November 26, 2008. Applicant filed a Response to the Final Office Action on March 26, 2009, and the Examiner responded in an Advisory Action mailed April 28, 2009. Applicant filed a Notice of Appeal on May 26, 2009, and an Appeal Brief on July 27, 2009. The Examiner responded to the Appeal Brief with a Non-Final Office Action on November 12, 2009. Applicant filed an Amendment in response to the Non-Final Office Action on March 12, 2010, and the Examiner responded in a Final Office Action on June 8, 2010. Following a telephone interview on September 7, 2010, Applicant filed a Notice of Appeal and an Amendment in response to the Final Office Action on November 8, 2010, and the Examiner responded in an Advisory Action mailed November 16, 2010 (indicating that the claim amendments filed after the Final Office Action will not be entered) which is the subject of this Appeal since the claims of the present application have been at least twice rejected by the Examiner.

Accordingly, the claims enclosed herein in Appendix A are directed to claims 1-21 which were presented in Applicant's response filed March 12, 2010.

V.   SUMMARY OF CLAIMED SUBJECT MATTER

Claim 1 is directed to a single nuclear medical examination scheduling program stored in computer memory and having computer executable instructions for causing a computer to create a schedule for each patient including an examination by the nuclear medical examination apparatus

and a medication accompanying the examination (see page 4, lines 15-19, of the present specification). The program causes the computer to perform (1) a function for fetching information on contents of the examination and an order of examination for each patient (see page 4, lines 20-21, of the present specification), (2) a function for fetching a waiting time from the medication to an examination set according to a type of examination; and (3) a function for creating an examination schedule to avoid overlapping in time between timing of the medication and the examination for each patient and timing of medication and examination for other patients, based on said information on contents of the examination and an order of examination and the waiting time (see page 4, line 22, to page 5, line 17, of the present specification). (Please also see page 10, line 23, to page 11, line 11, of the specification).

VI.   GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

1.   Whether claims 1-20 can be rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Kameda et al. (U.S. Patent No. 5,923,018) in view of White et al. (U.S. Patent Application Publication No. 2004/0019501 A1).

VII.   ARGUMENT

In the Office Action of June 8, 2010, the following rejection was presented by the Examiner:

(i)   35 U.S.C. §112, first paragraph

None

(ii)   35 U.S.C. §112, second paragraph

None

(iii) 35 U.S.C. §102

None

(iv)   35 U.S.C. §103

The Examiner rejected claims 1-20 under 35 U.S.C. §103(a) as being unpatentable over Kameda et al. (U.S. Patent No. 5,923,018) in view of White et al. (U.S. Patent Application Publication No. 2004/0019501 A1).

To establish a *prima facie* case of obviousness, the cited references, in combination, must teach or suggest the invention as a whole, including all the limitations of the claims. Here, in this case, Applicant submits that the Examiner has failed to establish a *prima facie* case of obviousness because the combined prior art of record fails to disclose or suggest all of the claim limitations with particular emphasis on the limitations, "*a function for creating an examination schedule to avoid overlapping in time between timing of the medication and the examination for each patient and timing of medication and examination for other patients, based on said information on contents of the examination and an order of examination and the waiting time.*"

The present invention is directed to scheduling for a nuclear medical examination apparatus from medication to examination. The present invention avoids overlapping in time between timing of medication and examination for each patient and timing of medication and examination for other patients, based on information fetched. In the present invention, it is the program itself which causes a computer to create and adjust the examination schedule for the nuclear medical examination apparatus to avoid overlap in time of timing of the medication and the examinations for each patient according to said fetching information (on said contents of the examination and said order of examinations), while maintaining fixed a waiting time from the medication to the examination set for each patient according to a type of examination (see paragraphs [0056], [0059], and [0069]-[0072] of the present Patent Application Publication No. 2004/0093252 A1).

In reopening prosecution after the previous Appeal Brief filed July 27, 2009, the Examiner conceded that Kameda et al. fails to disclose a function for creating an examination schedule based upon contents of the examination for each patient and an order of examination for

each patient, and waiting time (see page 4 of the Final Office Action), and cites White et al. to cure this deficiency in Kameda et al.

White et al. is directed to a computer-assisted system for scheduling, tracking and providing the status of patient cases undergoing a medical testing process. The system includes a scheduling application program, a patient tracking application, and a patient status grid. The patient tracking application provides patient queues for each selected step in the testing process to prioritize patient cases and organize completion of multiple steps in the testing process as to each patient case (see Abstract of White et al.).

More specifically, White et al. discloses a system in which a user enters an input to open the patient scheduler 200, which opens a scheduler window displaying various fields to be completed by the user. The user enters exam information 204 and completes the patient name field 208. The system then queries whether the patient has an existing patient record match on the system 212 and searches for an existing patient record matching the patient's name. If a record is found, the system displays a dialog box providing a link to the patient's name and asks whether the user wishes to accept this record 216. If no record is found or if a found record is not accepted, the user inputs the patient's social security number 220 and the system again searches for a match 224. If a record is found, the system displays a dialog box providing a link to the patient's name and asks whether the user wishes to accept this record 228. If no record is found or if a found record is not accepted, the user enters additional patient information requested by the system 232. The user then navigates the calendar display of the window to locate an appointment date and time acceptable to the patient 236 and then schedules an appointment 240 (see paragraph [0038] and Figure 2A of White et al.).

In contrast to the present invention, White et al. fails to disclose the system causing the computer to perform *a function for creating an examination schedule to avoid overlapping in time between timing of the medication and the examination for each patient and timing of medication and examination for other patients*. In White et al., the examination schedule is created by a user, not a computer. The system of White et al. merely stores and looks up patient records when information is inputted. Appointments are scheduled by a user on a calendar displayed by the system, but the system itself does not create the schedule. In other words, this scheduling system of

White et al. creates a schedule only by a manual operation, i.e., inputting patients' dates and times of appointment considering available times for diagnosis on a day-to-day or hourly basis, and not automatically. Consequently, situations of diagnostic apparatus and doctors are taken into consideration. Thus, White et al. does not disclose the most important characteristic of claim 1 in the present application, which is "*said program causing said computer to perform…a function for creating an examination schedule to avoid overlapping in time between timing of medication and examination for each patient and timing of medication and examination for other patients, based on the information on contents of the examination and an order of examination and the waiting time.*"

In addition, claim 1 in the present application is directed to a nuclear medical examination scheduling program, which is different in technical field from Kameda et al. and White et al. The present invention can avoid overlapping of (1) the timing of the medication required for a nuclear medical examination to be carried out before the examination, (2) the examination between patients, and (3) the examination itself, thereby readily improving the operating ratio of the nuclear medical examination apparatus. Further, the present invention makes the waiting time for each examination uniform. On the other hand, Kameda et al. and White et al. disclose scheduling programs for use in ordinary examinations at hospitals, which are irrelevant to the nuclear medical examination scheduling program to which the present invention is directed. Therefore, combined teachings of Kameda et al. and White et al. fail to teach or suggest all of the limitations of claim 1.

In response to these arguments, the Examiner insists in the Final Office Action that because the system and method of Kameda et al. is computer-implemented, it meets the limitations of the present claims. In other words, it appears that the Examiner believes that the current claim language does not exclude a system in which an operator performs certain functions utilizing a graphical user interface (see pages 7-8 of the Final Office Action). The Examiner makes similar arguments with regard to the teachings of White et al. (see pages 9-10 of the Final Office Action). Applicant disagrees. Claim 1 recites, "*A single nuclear medical examination scheduling program stored in computer memory and having computer executable instructions for causing a computer to create a schedule for each patient including an examination by the nuclear medical examination apparatus and a medication accompanying the examination.*" Thus, in the present invention, the single nuclear medical examination scheduling program itself contains the instructions that cause

the computer to create a schedule. In the prior art systems, on the other hand, the user enters the instructions through a graphic interface, as discussed above and in Applicant's previous response of March 12, 2010. As such, in the prior art systems, the instructions are not included in the program itself.

Also in the Final Office Action, the Examiner asserts that the recitation of "*a single nuclear medical examination*" has no patentable weight because the recitation occurs in the preamble of claim 1 (see page 5 of the Final Office Action). However, the body of the claim recites said examination, and this represents the examination by the nuclear medical examination apparatus included in the preamble. Therefore, this recitation breathes life into the claim and should be given patentable weight accordingly.

The Examiner also continues to assert in the Final Office Action that the recitation of "*to avoid overlapping in time between timing of the medication and examination for each patient*" is intended use (see page 8 of the Final Office Action). However, as noted in Applicant's previous response of March 12, 2010, this limitation is not an intended use because it is directed to a distinct feature of the program of the present invention which requires processing and comparing of data <u>by the computer</u>. In particular, the processing unit of the computer searches for available vacancies, based on the various pieces of information, and arranges schedules for different patients in a way to avoid overlapping in time of the patients' medication and examination. This is a scheduling function of the computer's processing unit, and not an intended use. In other words, while it may be an intended use to create schedules, <u>to avoid overlapping in time is a function of the computer's processing unit and not an intended use</u>. Further, this limitation is not a function performed by a user, but rather, it is a function that the program of the present invention causes the <u>computer</u> to perform.

In the present invention, the operator inputs the names of patients for desired days and then instructs a start of scheduling. The <u>processing unit 13</u> refers to the examination schedule display/edit, patient information and study series information, and prepares schedules for the days selected (see paragraph [0056] of the present Patent Application Publication). More specifically, the <u>processing unit 13</u> arranges examinations in respective patterns in a way to avoid overlapping in time between the timing of medication according to the information on the contents of examinations

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and the order of examinations in a way not to vary the waiting times of the respective patients (see paragraph [0059] of the present Patent Application Publication). Thus, the computer, which contains the processing unit 13, and not the user, creates the examination schedule.

Furthermore, in order to avoid such overlapping in time between the timing of the medication and examination for each patient and the timing of medication and examination for other patients, the computer creates a schedule automatically based on information, instead of a manual operation using a GUI. Therefore, the present invention is different in construction from White et al. and Kameda et al. and is not obvious therefrom. More specifically, referring to Reference figure 1 herein below,

Reference figure 1
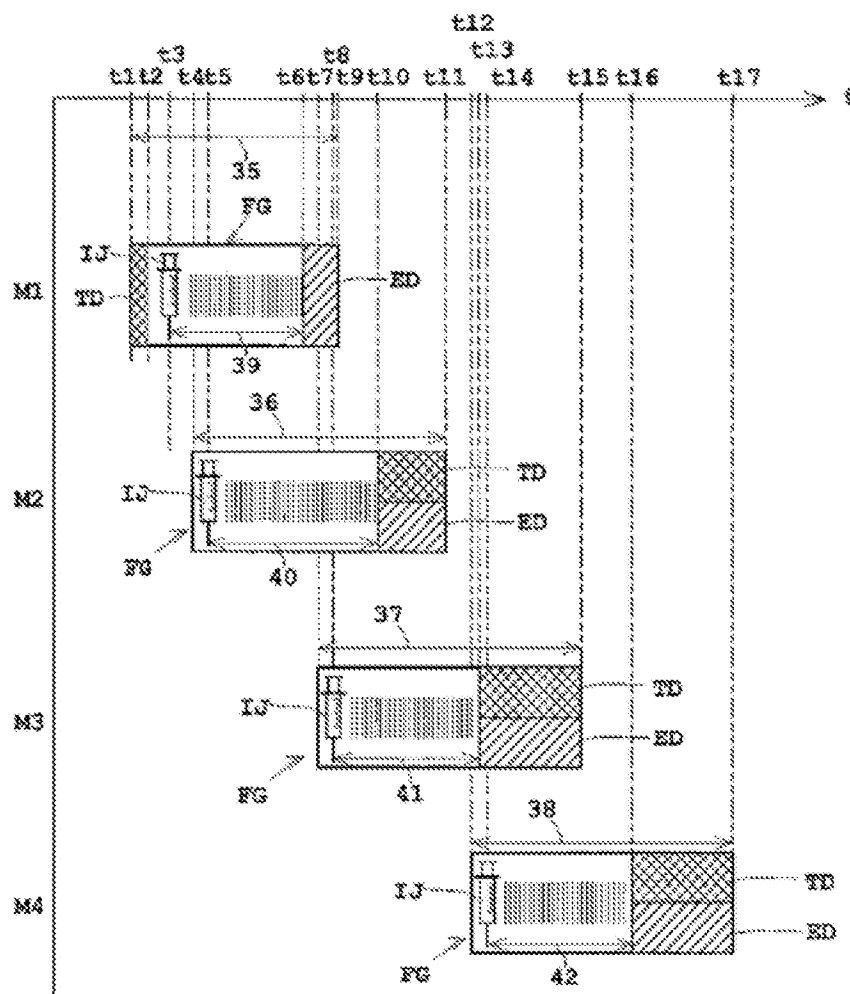
in the present invention it is assumed that instructions are given to examine four patients M1-M4 in the stated order, and that transmission data and emission data are separately collected for patient M1, while this data is simultaneously collected for patients M2-M4. It is also assumed that patients M1-M4 are to receive different types of examination, with time spans 33 having different time spans 35-38 of patterns FG and waiting times 39-42 (see paragraph [0058] and Figure 7 of the present Patent Application Publication).

The processing unit 13 arranges the examinations in the respective patterns FG, i.e. the timing of collecting transmission data TD and the timing of collecting emission data ED, in a way to avoid overlapping in time therebetween. At this time, overlapping in time between the timing of medication according to the information on the contents of examinations and the order of examinations, and the timing of examination, is avoided while maintaining fixed waiting times 39-42 (see paragraph [0059] of the present Patent Application Publication).

A schedule for examining patients M1-M4 in the stated order to satisfy the above conditions is, for example, as shown in Reference figure 1 (see paragraph [0060] of the present Patent Application Publication). This technique is reflected in the claim limitation, "*a function for creating an examination schedule to avoid overlapping in time between timing of the medication and the examination for each patient and timing of medication and examination for other patients, based on said information on contents of the examination and an order of examination and the waiting time.*"

Reference figure 2 (see next page) shows an example of schedule creation for two patients M1 and M2. Arrangement Pattern 1 is an example of arrangement by the above technique, and is an acceptable arrangement. In Arrangement Pattern 2, while overlapping in time between examination ED for patient M1 and examination TD/ED for patient M2 is avoided, timing of medication IJ for patient M1 and timing of medication IJ for patient M2 overlap in time. This is <u>an unacceptable arrangement</u>. In Arrangement Pattern 3, while overlapping in time between timing of medication IJ for patient M1 and timing of medication IJ for patient M2 is avoided, examination ED for patient M1 and examination TD/ED for patient M2 overlap in time. This is also <u>an unacceptable arrangement.</u>

Reference figure 2
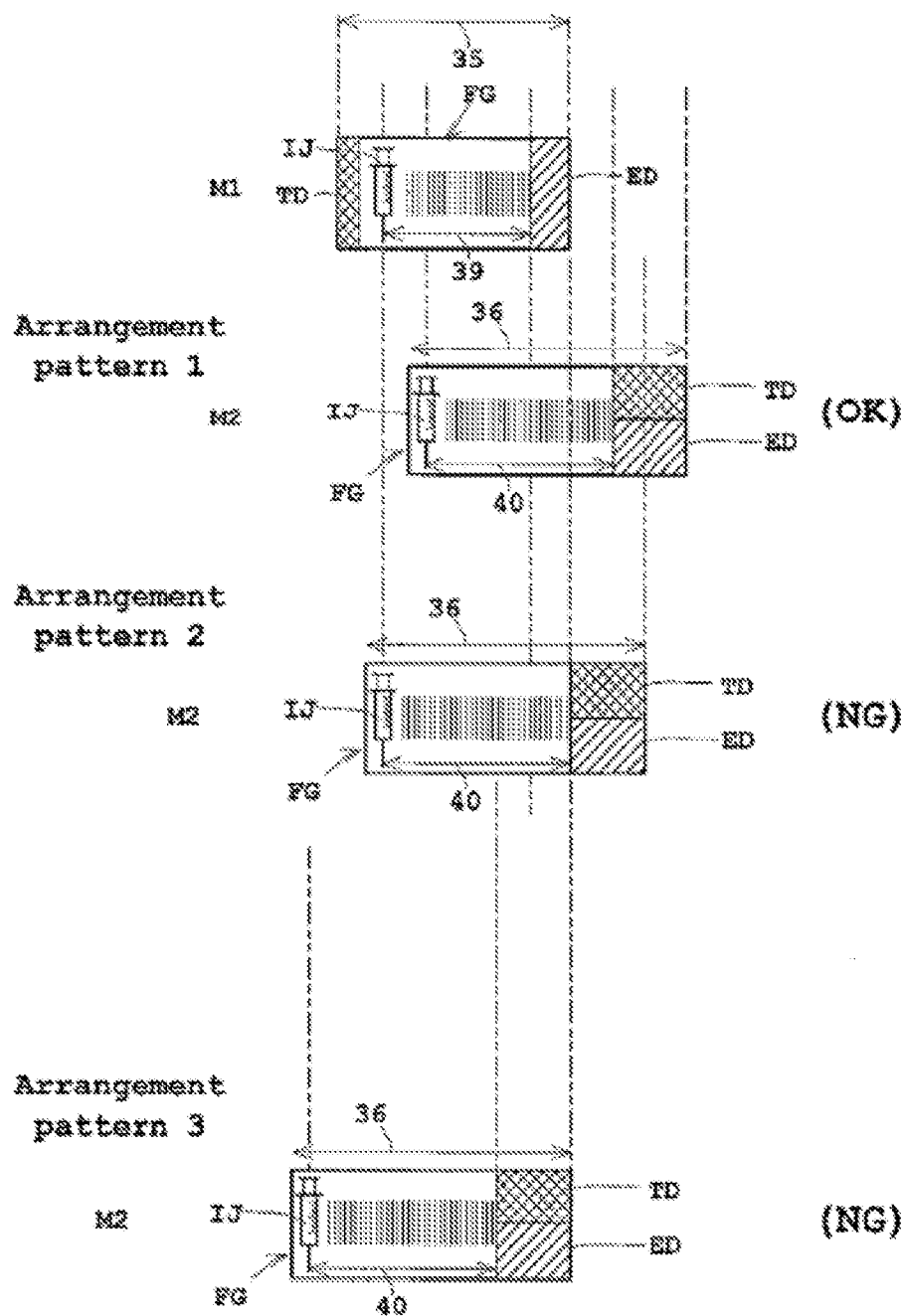
White et al. and Kameda et al. fail to disclose or suggest the feature that the computer makes an arrangement in a way, as noted above, to avoid overlapping in time between timing of the medication and the examination for each patient and timing of medication and examination for other patients.

The Examiner asserts that it would have been obvious to one of ordinary skill in the art to combine White et al. and Kameda et al. to create an examination schedule based on information on contents of the examination, an order of examination and the waiting time (see page 4 of the Final Office Action). The system of White et al., however, does not search for available vacancies and requires an operator to determine vacancies visually and create schedules (see above and pages 9-10 of Applicant's Response filed March 12, 2010 which explains in detail these features of White et al.). That is, the system of White et al. is different in construction from the processing unit of the computer of the present invention.

In view of the above, claim 1 is allowable over the combined teachings of Kameda et al. and White et al. Claims 2-20 depend directly or indirectly from allowable claim 1 and, therefore, are allowable for at least the same reasons that claim 1 is allowable.

In addition, claim 2 recites "*said schedule for each patient is expressed by a pattern having a time span according to the type of examination, said pattern presenting the timing of the medication, the waiting time and the contents of the examination.*" The Examiner points out that Kameda et al. discloses the claimed features in Figure 8; column 18, lines 9-31, (see page 5 of the Final Office Action). However, Kameda et al. only discloses a "*table in which the medical care actions in each one month period are put in one frame 41 of the table and the columns are arranged over month as shown in FIG. 8. Other than one month, although a time unit such as 3 days, one week, one year or 10 years which are easily understood, can be preferable used here*" (see column 18, lines 17-23, of Kameda et al.). In other words, the table of Kameda et al. uses "an arbitrary time unit" and not a *time span according the type of examination* as recited in claim 2 (see column 18, lines 23-27 of Kameda et al.).

In addition, Figure 8 of Kameda et al. illustrates a table which is different from a graphic pattern having a time span according to the type of examination, presenting a schedule for each patient as defined in claim 2. Also, White et al. fails to cure this deficiency in the teachings of

Kameda et al. Therefore, the combined teachings of Kameda et al. and White et al. fail to teach or suggest all of the limitations of claim 2. Therefore, Applicant respectfully submits that claim 2 is allowable.

Accordingly, for these reasons, Applicant respectfully requests withdrawal of the present prior art rejection.

(v)   Other

None

VIII.   CLAIMS APPENDIX

A copy of the claims involved in the present appeal is attached hereto as Appendix A.

IX.   EVIDENCE APPENDIX

No evidence pursuant to §§1.130, 1.131, or 1.132 or entered by or relied upon by the Examiner is being submitted.
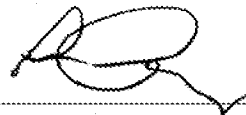
X.   RELATED PROCEEDINGS APPENDIX

No related proceedings are referenced in II. above. Thus, no copies of decisions in related proceedings are provided.

CONCLUSION

Applicant believes that no additional fee is due with this brief. However, if a fee is due, please charge our Deposit Account No. 50-4422, under Order No. SUT-0225 from which the undersigned is authorized to draw.

Dated: February 8, 2011   Respectfully submitted,

By: _____

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APPENDIX A

Claims Involved in the Appeal of Application Serial No. 10/653,193.

1. (Previously Presented) A single nuclear medical examination scheduling program stored in computer memory and having computer executable instructions for causing a computer to create a schedule for each patient including an examination by the nuclear medical examination apparatus and a medication accompanying the examination, said program causing said computer to perform:

a function for fetching information on contents of the examination and an order of examination for each patient;

a function for fetching a waiting time from the medication to an examination set according to a type of examination; and

a function for creating an examination schedule to avoid overlapping in time between timing of the medication and the examination for each patient and timing of medication and examination for other patients, based on said information on contents of the examination and an order of examination and the waiting time.

2. (Previously Presented) The single nuclear medical examination scheduling program as defined in claim 1, wherein said schedule for each patient is expressed by a pattern having a time span according to the type of examination, said pattern presenting the timing of the medication, the waiting time and the contents of the examination.

3. (Previously Presented) The single nuclear medical examination scheduling program as defined in claim 1, wherein said schedule for each patient is displayed in form of a pattern on a time chart, with a line representing present time displayed to move on the time chart with progress of time.

4. (Previously Presented) The single nuclear medical examination scheduling program as

defined in claim 2, wherein said schedule for each patient is displayed in form of a pattern on a time chart, with a line representing present time displayed to move on the time chart with progress of time.

5. (Previously Presented) The single nuclear medical examination scheduling program as defined in claim 1, wherein said schedule is altered by moving said pattern on said time chart with a pointing device.

6. (Previously Presented) The single nuclear medical examination scheduling program as defined in claim 2, wherein said schedule is altered by moving said pattern on said time chart with a pointing device.

7. (Previously Presented) The single nuclear medical examination scheduling program as defined in claim 3, wherein said schedule is altered by moving said pattern on said time chart with a pointing device.

8. (Previously Presented) The single nuclear medical examination scheduling program as defined in claim 4, wherein said schedule is altered by moving said pattern on said time chart with a pointing device.

9. (Previously Presented) The single nuclear medical examination scheduling program as defined in claim 1, wherein said schedule for each patient is under control, and a correlation is made between actual measurements including actual medication and examination times, and data collected by said nuclear medical examination apparatus.

10. (Previously Presented) The single nuclear medical examination scheduling program as defined in claim 2, wherein said schedule for each patient is under control, and a correlation is made between actual measurements including actual medication and examination times, and data collected by said nuclear medical examination apparatus.

11. (Previously Presented) The single nuclear medical examination scheduling program as defined in claim 3, wherein said schedule for each patient is under control, and a correlation is made between actual measurements including actual medication and examination times, and data collected by said nuclear medical examination apparatus.

12. (Previously Presented) The single nuclear medical examination scheduling program as defined in claim 4, wherein said schedule for each patient is under control, and a correlation is made between actual measurements including actual medication and examination times, and data collected by said nuclear medical examination apparatus.

13. (Previously Presented) The single nuclear medical examination scheduling program as defined in claim 5, wherein said schedule for each patient is under control, and a correlation is made between actual measurements including actual medication and examination times, and data collected by said nuclear medical examination apparatus.

14. (Previously Presented) The single nuclear medical examination scheduling program as defined in claim 6, wherein said schedule for each patient is under control, and a correlation is made between actual measurements including actual medication and examination times, and data collected by said nuclear medical examination apparatus.

15. (Previously Presented) The single nuclear medical examination scheduling program as defined in claim 7, wherein said schedule for each patient is under control, and a correlation is made between actual measurements including actual medication and examination times, and data collected by said nuclear medical examination apparatus.

16. (Previously Presented) The single nuclear medical examination scheduling program as defined in claim 8, wherein said schedule for each patient is under control, and a correlation is made between actual measurements including actual medication and examination times, and data

collected by said nuclear medical examination apparatus.

17. (Previously Presented) The single nuclear medical examination scheduling program as defined in claim 1, further comprising a step of inputting an actual medication time, a step of comparing a scheduled medication time and said actual medication time, and a step of creating an examination schedule all over again when said step of comparing shows a disagreement.

18. (Previously Presented) The single nuclear medical examination scheduling program as defined in claim 2, further comprising a step of inputting an actual medication time, a step of comparing a scheduled medication time and said actual medication time, and a step of creating an examination schedule all over again when said step of comparing shows a disagreement.

19. (Previously Presented) The single nuclear medical examination scheduling program as defined in claim 3, further comprising a step of inputting an actual medication time, a step of comparing a scheduled medication time and said actual medication time, and a step of creating an examination schedule all over again when said step of comparing shows a disagreement.

20. (Previously Presented) The single nuclear medical examination scheduling program as defined in claim 5, further comprising a step of inputting an actual medication time, a step of comparing a scheduled medication time and said actual medication time, and a step of creating an examination schedule all over again when said step of comparing shows a disagreement.

21. (Withdrawn) A nuclear medical examination apparatus comprising:
a gantry having radiation detectors;
a bed movable into and out of an opening of said gantry for supporting a patient;
a data collector for collecting data detected by said radiation detectors; and
a processor;
wherein said processor has a function for fetching information on contents of the examination and an order of examination carried out by said apparatus for each patient, a function

for fetching a waiting time from medication to the examination set according to a type of examination, and a function for creating an examination schedule to avoid overlapping in time between timing of the medication and the examination for each patient and timing of medication and examination for other patients, based on said information on contents of the examination and an order of examination, said processor causing said data collector to collect data and storing the data collected when the medication has been given the waiting time has elapsed according to the examination schedule created.